

Hospital Topics

Audit of surgical practice in a community hospital

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Abstract

The results of a prospective analysis of one year's surgery on inpatients in a busy community hospital showed that a high quality of surgery may be achieved with safety and low rates of complications. The results of a retrospective analysis of certain aspects of surgery was just as encouraging. Surgery that is performed in a community hospital is convenient for the patient, provides continuity of care by the general practitioner, and waiting list times are short. Surgical facilities can form an integral part of the comprehensive service provided by a community hospital and can lighten the caseload for minor surgery at the district general hospital. Close liaison between the two hospitals is essential.

Introduction

The past 10 years have seen a pronounced change in the climate of opinion regarding surgery in community hospitals. In 1975 the Department of Health and Social Security's consultative document *Community Hospitals* proposed phasing out surgical facilities (unless the surgery was of a scale that could be performed in a doctor's own practice premises), maternity facilities, all but simple facilities for x ray examinations, and all but minor casualty facilities from community hospitals.¹ A further report, *The Way Forward*, "broadly confirmed" this policy but was more flexible and allowed occasional exceptions according to local circumstances, where, for example, a hospital was being used "usefully and economically" to provide surgery or other facilities.² The most recent policy document proposed a shift of emphasis from the increasing centralisation of facilities in large hospitals of former years to a policy of retaining facilities based in the community as much as possible; these may include "selected surgical and medical specialist services, with day surgery and day abortion facilities, and related rehabilitation."³

Over the same period many papers described surgical facilities in community hospitals and showed the tremendous benefit to their local populations.⁴⁻⁹ The recent publication from the Royal College of General Practitioners, *General Practitioner Hospitals*, draws attention to the 70 000 operations per year performed in community hospitals.¹⁰

Nevertheless, despite current DHSS policy and the available published papers, opinions have often been slow to change in regions and areas, and community hospitals continue to be early targets for economies and closures. The view is still occasionally expressed that surgery in community hospitals is somehow unsatisfactory or unsafe. I therefore decided to audit the surgery

in our community hospital, both medically and from the patient's point of view, in an attempt to reach conclusions regarding its contribution, its quality, and its safety.

Organisation

Brecon War Memorial Hospital is a community hospital of 40 beds situated in a rural area of mid Wales and is run by a practice of eight general practitioners. The practice population is 13 500 and patients are also referred for care from neighbouring practices, so that the overall catchment is probably 18 000 to 20 000. Each doctor looks after a general practice list of 1700 patients on average, and in addition has a specialty interest: one general surgeon (FRCS), one obstetrician/gynaecologist (MRCOG), one ear, nose and throat surgeon, two anaesthetists (one with FFARCS), one general physician (MRCP), one paediatrician (MRCP), and one partner with an interest in orthopaedics. The hospital provides general medical and surgical care up to a certain level, above which cases are referred to the parent district general hospital at Abergavenny (20 miles away); an obstetric service for 190 patients a year (with facilities for caesarean section, fetal monitoring, etc); a casualty service for 6000 new patients a year; and facilities for outpatients, radiology, and physiotherapy.

Patients with conditions that are suitable for surgery in Brecon, as defined by our visiting consultants, are referred to one of the three general practitioner/surgeons. The aim is to perform a limited range of straightforward surgery on fit patients, so that potential problems are minimised. Our anaesthetists similarly limit themselves to a restricted range of anaesthetic agents and procedures, for maximum familiarity and safety. Two lists of elective surgery are run a week, one of gynaecology/general surgery, and one of ear, nose, throat/general surgery. Visiting consultants also operate once a month. Emergency operations mainly comprise appendicectomies, caesarean sections, laparoscopies, and evacuation of retained products of conception. Care is taken to avoid more complex problems such as bowel obstruction.

TABLE 1—Scope of inpatient surgery (488 operations)

General surgery (174 cases)		Gynaecology (180 cases)	
Vasectomies	32	Dilatation and curettage	65
Hernias (unilateral)	29	Tubal ligation	26
Minor operations under general anaesthesia	29	Laparoscopies	21 (6*)
Appendicectomies	17*	Termination of pregnancy	18
Varicose veins	12	Evacuation of uterus	14*
Breast biopsies	12	Hysterectomies	11
Carpal tunnel decompression	11	Ovarian cystectomies	6
Haemorrhoidectomy	9	Vaginal repairs	3
Keller's arthroplasty	5	Shirodkar sutures	14
Hydrocele operations	4	Miscellaneous/other	14
Excision of pilonidal sinus	4		
Circumcision	3	Obstetrics (32 cases)	
Miscellaneous/other	7	Caesarean sections:	
		Emergency	15*
		Elective	14
		Forceps under general anaesthesia	2*
		Examination under anaesthetic, artificial rupture of membranes (?placenta praevia)	1*
Ear, nose, and throat (99 cases)		Dental (3 cases)	
Tonsillectomy	30	Dental clearances (by dentist)	3
Adenoidectomy	13		
Tonsillectomy and adenoidectomy	8		
Antral washouts	8		
Nasal polypectomy	8		
Submucous resection	8		
Myringotomy/insertion grommets	7		
Reduction of nasal fracture	7		
Miscellaneous/other	10		

*Emergencies.

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TABLE II—Complications of inpatient surgery/anaesthesia (488 operations)

Haemorrhage (n = 6)	
Operative, requiring transfusion	1 (caesarean section)
Postoperative haemorrhage	3 (1 circumcision, 1 breast biopsy, 1 tonsillectomy)
Wound haematomas	2 (in Pfannenstiel incisions)
Wound infection (n = 11)	
Abdominal wound infections	6 (3 caesarean sections, 1 hysterectomy, 1 appendicectomy, 1 tubal ligation)
Infection in superficial operations	5 (1 varicose veins, 1 breast biopsy, 1 herniorrhaphy, 2 vasectomies)
Chest infection (n = 9)	
Thrombosis (n = 2)	
Deep vein thrombosis (treated)	2 (1 hysterectomy, 1 Keller's arthroplasty)
Pulmonary embolism	0
Anaesthesia (n = 18)	
Difficult intubations	3
Vomiting during recovery/possible aspiration	2
Postoperative recurarisation requiring reintubation	1
Postoperative bradycardias requiring intravenous atropine	5
Requiring emergency oxygen for cyanosis	5
Possible awareness	2
Deaths after operation (n = 0)	
	None

Two of the general practitioner/surgeons also have a weekly session in the operating theatre in the district general hospital at Abergavenny, and this allows close liaison with consultants and increases each general practitioner/surgeon's caseload of operations.

Method

All surgery on inpatients performed in the operating theatre during the year April 1982 to March 1983 was studied prospectively noting the duration of time on waiting lists, the type of operation, anaesthesia, and any subsequent problems or complications. Concurrently, patients were asked to fill in a coded, anonymous questionnaire two weeks after their discharge, relating to their care and their reasons for preferring, or not, to have their operation in their community hospital. A 10 year retrospective analysis was also made of all inguinal herniorrhaphies for possible recurrences as one measure of the quality of surgery, and of appendicectomies for the percentage found to be "acute" as a measure of diagnostic accuracy.

Results

OPERATIONS PERFORMED

During the year 488 operations were performed on inpatients using the operating theatre (table I). This group was subjected to detailed scrutiny: 433 operations were elective, of which 10 (2.3%) were performed by visiting consultants, and 55 were emergency procedures. A further 534 minor operations—that is, excision biopsies, drainage of abscesses, reduction of fractures and dislocations, dental extractions—were carried out using the casualty department, mostly on outpatients. Thus the total caseload of operations for the year was 1022 (43 major, 349 intermediate, and 630 minor procedures).

During the same one year period 160 operations on inpatients took place in the parent district general hospital and other specialist hospitals, after referral from the Brecon practice population of 13 500 patients. Of the 1022 operations undertaken by the community hospital, 879 were on patients from the Brecon practice population. Therefore, overall, 85% of the surgical needs of the Brecon population were dealt with in the community hospital. Minor surgery tended to occur in the community hospital and major surgery in the district general hospital. Major gynaecological surgery in the community hospital was either performed by or supervised by a consultant. Caesarean sections were not supervised, although the decision to perform an elective section was made by our visiting consultant obstetrician.

COMPLICATIONS OF SURGERY AND ANAESTHESIA

Complications are summarised in table II. Although plasma expanders and plasma are held at the hospital, the frequency of use does not warrant keeping blood. Blood can be obtained by taxi within 30 minutes if required and we have found this arrangement satisfactory. A low infection rate was experienced, and in particular nursing patients postoperatively in a general ward among medical and geriatric patients did not produce a high infection rate. A prophylactic antibiotic regimen (cephaloridine and metronidazole) is used after hysterectomy, vaginal repair, and, if sepsis occurs, at appendicectomy. Postoperative thrombosis was surprisingly uncommon; presumably more cases occurred but were subclinical. Inflatable trousers and antiembolism stockings are used, and patients who have had caesarean sections, hysterectomies, and repairs and obese patients receive low dose heparin routinely.

Anaesthetic problems have been fully documented. We attach great importance to assessment before operation by both the surgeon who will perform the operation and the anaesthetist, to using a standard anaesthetic method and the limited range of agents, and to full recovery of consciousness and reflexes before the patient leaves the operating theatre. The two patients who complained of possible awareness were a source of concern; one occurred during evacuation of the uterus and inadequate analgesia with the premedication was likely. The other case was less certain and occurred towards the end of a tubal ligation. Anaesthesia was possibly "lightened" too soon.

WAITING LIST TIMES

Average duration on the waiting list was calculated from the date the patient saw his own doctor to the date of operation: termination of pregnancy 1 week; other gynaecological operation 3.2 weeks; general surgery 4 weeks; and ear, nose, and throat surgery 6.4 weeks. Cases where the patient chose to delay operation until a convenient date were excluded.

SURVEY OF INPATIENTS

A questionnaire was sent to 488 inpatients who had had an operation and 305 (62.5%) replies were received (table III). A further questionnaire sent to a random sample of non-responders showed a similar response rate and pattern of opinion.

Most patients were very pleased with their medical and nursing care. The nurses were described as "kind, considerate, nothing was too much trouble, I was treated like one of the family." Another comment read: "An efficiently run hospital where even the domestic staff are aware of their caring role." Many patients were reassured by seeing their own doctor every day. All of the criticisms were minor. One patient complained of an excessive wait between admission and vasectomy (we have altered times accordingly), one patient complained of inadequate analgesia, and one of conflicting advice from doctor and nurses. Fifteen patients disliked being nursed in a general ward among elderly patients; 23 suggested a restriction of open visiting; seven praised open visiting.

TABLE III—Results of inpatient questionnaire (305 replies/488 patients)

	No (%)	No (%)	No (%)
Comments on:	<i>Excellent</i>	<i>Satisfactory</i>	<i>Criticism</i>
Nursing care	290 (95)	12 (4)	3 (1)
Medical care	294 (96)	10 (3)	1 (0.3)
Operation	<i>Better than expected</i>	<i>As expected</i>	<i>Worse than expected</i>
No previous operation (n = 191)	30 (16)	153 (80)	8 (4)
Previous Brecon operation (n = 54)	11 (20)	39 (72)	4 (8)
Previous operation in district general hospital (n = 60)	19 (31)	40 (67)	1 (2)
Anaesthetic			
No previous operation (n = 191)	95 (50)	73 (38)	23 (12)
Previous Brecon operation (n = 54)	19 (35)	32 (59)	3 (6)
Previous operation in district general hospital (n = 60)	24 (40)	30 (50)	6 (10)
Preferred place of operation	<i>Brecon</i>	<i>No preference</i>	<i>District general hospital</i>
No previous operation (n = 191)	185 (97)	4 (2)	2 (1)
Previous Brecon operation (n = 54)	54 (100)	0 (0)	0 (0)
Previous operation in district general hospital (n = 60)	54 (90)	6 (10)	0 (0)

Patients generally found their operations and anaesthetics as they had expected or better. An uncomfortable recovery from anaesthesia or postoperative complications accounted for the small number who felt worse than expected.

Most patients stated a definite preference to have their operation in the community hospital. This may partly reflect community loyalty, as 80% had not had an operation elsewhere to compare it with. Reasons given for preferring the community hospital were: friendly, informal, happy atmosphere; ease of visiting and reduced travelling costs; being cared for by their own doctor; knowing the doctors, nurses, and other patients; being treated as a "person and not a case"; shorter waiting lists; and being given a choice of operation dates.

RETROSPECTIVE ANALYSIS

A 10 year retrospective analysis of inguinal herniorrhaphies and emergency appendicectomies was undertaken as further possible indices of the quality of surgical care.

Herniorrhaphies—Over the past 10 years 224 operations have been performed, all of the Bassini type, but with some variations among surgeons. A 90% response rate was obtained to a postal questionnaire (excluding 15 patients who had died, and 19 who had moved away), and one recurrence was reported in 170 replies (0.58% recurrence rate after an average of five years). It is accepted that clinical examination would have been preferable. A recurrence rate of less than 1% at five years is usually considered acceptable.¹¹

Appendicectomies—Another possible criterion of surgical care is the diagnostic accuracy of surgeons when operating for suspected appendicitis (all three general practitioner/surgeons perform them): 173 appendicectomies were performed. Appendices were judged as clinically inflamed, or worse, at operation in 87% of cases, and this was confirmed histologically in 79% of appendicectomy cases. Eleven sets of casenotes could not be found and were excluded. Patients were observed for a mean of 4.1 hours before operation.

Discussion

The results of this study show that a selected range of operations can be performed safely and efficiently in a community hospital and that this service is highly valued by the patients. We hold the view that surgery should be performed in community hospitals only if the quality of surgery is high, the rate of complications low, and there are adequate provisions for safety. Only then can other benefits, such as the convenience to the patient, short waiting lists, and a more personal touch, be taken into consideration.

One major criticism of our system is the lack of resident medical staff in the hospital to cope with sudden emergencies, and to some extent this is valid. During the day, however, two or three doctors are usually in the hospital at any one time, and many of our nursing staff have as a result of their own enthusiasm, and also from quarterly tutorials in resuscitation, become skilled at managing emergencies. At night two of the three surgeons live within three minutes' drive of the hospital. Furthermore, the value of an experienced and unchanging team tackling emergencies should not be underrated.

Although two of our surgeons hold higher qualifications, previous and continuing experience of the range of procedures being performed is probably more relevant. The Royal College of Surgeons of England think that a general practitioner/surgeon should preferably have two years of surgical experience at registrar level, but emphasise that their suggested criteria should be capable of variation according to local needs, the type of surgery being performed, the extent of supervision by a consultant, and the qualifications and experience of the doctor concerned. Clearly, where the consultant does not see all patients (as in our case), he cannot be expected to accept full clinical responsibility. In providing general supervision as the responsible consultant he should also have control of the range of surgery performed and should have an opportunity to approve the appointment of a general practitioner/surgeon (personal communication).

To stay in practice it is extremely useful to have additional sessions in the operating theatre in the district general hospital. We have found that one theatre session a week in the community hospital and one theatre session a week in the district general hospital to be optimal. More than two sessions a week makes the continuity of care of general practice patients unsatisfactory.

We are fortunate in enjoying excellent relations with both our visiting consultants and our laboratory consultants, and have much to thank them for. The relationship of a community hospital to its district general hospital must be one of liaison and cooperation and not of competition. Criticism needs to be given and taken from time to time.

There is probably a place for some of the larger community hospitals in each authority performing a surgical role such as I have described. Essential elements are adequate facilities, enthusiasm, previous experience, attention to detail, an acceptance of audit, and consultant participation. Freeing the district general hospital of much minor surgery should have economic advantages and help reduce waiting lists. Costing by the Welsh Office in our case shows an average cost per inpatient day of £71 in our district general hospital compared with £50 for the community hospital.¹² There are undoubtedly additional savings in consultant time and ambulance costs and some additional operating theatre and transport costs, so that a strict comparison is difficult to make.

Lastly, there are definite benefits for the community hospital. Surgery in a hospital carries over to many other forms of patient care and helps to maintain practice with emergencies of all kinds. There are considerable advantages to the morale of all staff and quite naturally to recruitment. It is regrettable that in many parts of Britain doctors and nurses, who are working in the community and have previously undergone training in the hospital service, have skills that they are unable to use, while queues for common operations, such as herniorrhaphy, remain long in many areas. This is a resource which need not be wasted.

I am grateful to Mr R F Rintoul, consultant surgeon, Abergavenny, and Professor L E Hughes, professor of surgery, Cardiff, for their advice and criticism, to Mrs D Hawes, Mrs H Bell, Mrs M Perry, Sister E Jones, and Mr K Anthony for considerable help in gathering data, and to the nursing staff and my partners who cooperated in this study.

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(Accepted 2 February 1984)